TECHNICAL REVIEW: STANDARD PERMIT FOR INSTALLATION AND/OR MODIFICATION OF OIL AND GAS FACILITIES

Permit No.:	143023	***Company Name:***	Hunt Oil Company	***APD Reviewer:***	Ms. Lillian Hayes
Project No.:	261484	***Site/Area Name:***	Davis Central Facility	***SP No.:***	6002 - NON RULE 2012-NOV-08

GENERAL INFORMATION			
Regulated Entity No.:	RN106856420	**Project Type:**	Standard Permit Application
Customer Reference No.:	CN600551477	**Date Received by TCEQ:**	November 17, 2016
City/County:	Poth, Wilson County	**Date Received by Reviewer:**	November 28, 2016
		Physical Location:	from the intx of highway 181 & westmeyer go ne on westmeyer for 1.5 mi turn right on fm 541 & go 7.33 mi to site on right

CONTACT INFORMATION					
Responsible Official/Primary Contact Name and Title:	Mr. David Adams Production Manager	**Phone No.:** **Fax No.:**	(830) 484-3721	**Email:**	DADAMS@HUNTOIL.COM
Technical Contact/Consultant Name and Title:	Mr. Justin Wheeler Senior EHS Representative	**Phone No.:** **Fax No.:**	(214) 978-8123	**Email:**	JWHEELER@HUNTCONSOLIDATED.COM

GENERAL RULES CHECK	YES	NO	COMMENTS
Is confidential information included in the application?		X	
Has the standard permit fee been paid?	X		
Are there associated NSR or Title V permits at the site?	X		PBR 112110 will be voided upon issuance of this Standard Permit.
Is the application for renewal of an existing standard permit?		X	
Do NSPS, NESHAP, or MACT standards apply to this registration?	X		NSPS OOOO (No affected storage vessels). NSPS OOOOa
Is the following documentation included with this registration? 1. The General Requirements Checklist demonstrating compliance with 30 TAC §§ 116.110 and 116.601-615 2. Process description 3. Project description 4. Descriptions of any equipment being installed 5. Emissions calculations including the basis of the calculations 6. Emission increases and/or decreases associated with this project (quantified) 7. Description of efforts to minimize any collateral emissions or collateral increases	X		
Are any requirements of 116.110 circumvented by: (1) artificially limiting feed or production rates below the maximum capacity of the project's equipment; (2) claiming a limited chemical list; or (3) dividing and registering a project in separate segments?		X	

NONATTAINMENT AND PSD CHECK	YES	NO	COMMENTS
Is the site located in a nonattainment area?		X	
Does NOx Cap and Trade apply to this registration?		X	
Are emissions increasing above the PSD significance levels at an existing PSD major source site?		X	

MAINTENANCE, STARTUP, AND SHUTDOWN (MSS) EMISSIONS	YES	NO	COMMENTS
Are planned MSS emissions being registered with this authorization? *MSS emissions for all planned MSS activities must be registered for all oil and gas sites beginning January 5, 2014.*	X		
Have any emissions associated with all planned MSS events/activities been estimated and calculations provided?	X		

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Non Rule Standard Permit Requirements		
REQUIREMENTS	YES, NO, or NA	COMMENTS
What is the distance to the nearest receptor?		Actual distance: >50 feet.
If the distance to the nearest receptor is less than 50 feet, are fugitive components used for isolation or safety purposes the only emission sources located one-half the width of any applicable easement?	N/A	
Are the total benzene emissions greater than 0.039 lb/hr?	Yes	Total benzene emissions: 0.05 lb/hr
Are the project's maximum predicted concentrations of benzene at the nearest receptor equal to or less than 10% of the appropriate effects screening level (ESL)? Benzene short-term ESL: 170 µg/m³ Benzene long-term ESL: 4.5 µg/m³		Impacts Provided
What is the distance to the nearest property line?		Actual distance: >50 feet.
Are the total H_2S emissions greater than 0.025 lb/hr?	Yes	Total H_2S emissions: 0.34 lb/hr
Are the project's maximum predicted concentrations of H_2S at the nearest property line equal to or less than the significant impact level (SIL)? H_2S hourly SAAQS: 108 µg/m³		Impacts Provided
Are the total SO_2 emissions greater than 2.0 lb/hr?	Yes	Total SO_2 emissions: 12.48 lb/hr
Are the project's maximum predicted concentrations of SO_2 at the nearest property line equal to or less than the significant level (SIL)? SO_2 hourly SAAQS: 196 µg/m³		SCREEN 3 provided. Company used out of county SO2 monitors to calculate background concentration. Application went through TCEQ Modeling Team and was approved.
Are the total NOx emissions greater than 4.0 lb/hr?	No	Total NOx emissions: 0.93 lb/hr
Are the project's maximum predicted concentrations of NOx at the nearest property line equal to or less than the significant impact level (SIL)? NOx hourly SAAQS: 188 µg/m³		SCREEN 3 provided
Are there any engines or turbines located at the site?	No	
Are there any open-topped tanks or ponds located at the site?	No	
Will the site comply with all fugitive requirements listed in the Best Management Practices subsection? *If Leak Detection and Repair (LDAR) alternative fugitive monitoring is required, Table 9 must be met.*	Yes	__X__ < 10 tpy VOC or < 1 tpy H_2S ____ ≥ 10 tpy VOC or ≥ 1 tpy H_2S ____ ≥ 25 tpy VOC or ≥ 5 tpy H_2S LDAR program: No
Are there any tanks or vessels located at the site?	Yes	
Will all tanks and vessels be of a color that minimizes the effects of solar heating as stated in the rule?	Yes	
When relying on control or recovery devices in emission calculations, will the owner/operator monitor and keep records according to Table 8?	Yes	
Are any of the following units needed to meet the limitations of the rule?	No	____ process reboilers, heaters, and furnaces (used for control) ____ vapor recovery units ____ thermal oxidation and vapor combustion devices (not including flares)
Will the appropriate level of monitoring be implemented based on any reduction efficiencies claimed?	Yes	
Are there any flares or thermal oxidizers located at the site needed to meet the limitations of the rule?	Yes	
Is the site in compliance with all other requirements.	Yes	

DESCRIBE OVERALL PROCESS AT THE SITE
The Davis Central Site production wells deliver produced liquids via pipeline to heater treaters to enable the three-phase separation of gas and water from the oil/condensate. The heater treater is fueled by sour gas. The H2S content of fuel gas is limited to 10,970 ppmv. A chemical gas scavenger unit may be added to the site if H2S concentrations measured at the site warrant the use of the equipment. A maximum of two heaters can be fired simultaneously. Oil/condensate from the heater treaters is routed to the vapor recovery tower where approximately 95% of the flash occurs, then sent to the oil/condensate tanks. Produced water from the heater treaters is sent to the produced water tanks. Produced gas from the heater treaters and emissions from the tanks are sent to the process flare for 98% destruction efficiency. The oil/condensate and produced water are loaded to trucks for transport to market and disposal, respectively. The loading vapors are routed to the flare for 98% destruction. Other sources of emission include fugitive emissions from piping and emissions from MSS.

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DESCRIBE PROJECT AND INVOLVED PROCESS

A project has been submitted to certify the emissions from Davis Central Facility under a Non-Rule Standard Permit. The RE has provided all required information including a site plan, area map, process flow diagram, gas and liquid analyses, emissions for each facility, emission summary, emission calculations, technical documents, Federal applicability information, and completed checklists.

The company wishes to void PBR 112110 upon issuance of this authorization.

OIL AND GAS FACILITY GENERAL INFORMATION

Natural Gas Throughput (MMSCF/day):	0.08	**H_2S Content of Inlet Gas:**	17,000 ppm
Oil/Condensate Throughput (bbl/day):	150	**Is the gas sweet or sour?**	Sour
Produced Water Throughput (bbl/day):	350	**Is this site operational/producing?**	Yes

EQUIPMENT/PROCESSES AT SITE

Number of each:						
	Compressor Engines:		**Glycol dehydrators:**		**VRU:**	
	Separators:		**Amine units:**		**Other:**	
	Storage Tanks:	9	**Heater Treaters:**	3*	**Other:**	
	Truck Loading:	2	**Flares:**	1	**Other:**	

*Note: The H2S content of fuel gas is limited to 10,970 ppmv. A chemical gas scavenger unit may be added to the site if H2S concentrations measured at the site warrant the use of the equipment. A maximum of two heaters can be fired simultaneously.

STORAGE TANKS

Tank Identifier (EPN)	Capacity of Tank	Throughput (bbl/day)	Contents of Tank	Working and breathing Loss Calculation Method*	Flash Loss Calculation Method	Other
TNK1-TNK3	400 BBL	350	3 Produced Water Tanks	Tanks 4.0	GOR via VMGSim	Routed to Flare for 98% destruction efficiency
TNK7-TNK12	400 BBL	150	6 Oil/Condensate Tanks	Tanks 4.0	GOR via VMGSim	

TANKS 4.0 SOFTWARE [FOR ESTIMATING WORKING AND BREATHING LOSSES FROM STORAGE TANKS]

Tank Identifier (EPN)	Throughput (gallons/year) (pg. 1 of report)	Turnovers per year (pg. 1 of report)	Mixture/ Component (pg. 2 of report)	Basis for VP Calculations (pg. 2 of report)	Vapor MW (pg. 2 of report)	Results (lb/year) (last page of report)	Emissions after any controls (tpy)
TNK1-TNK3	1,788,500 (per tank)	106.44	Crude Oil RVP 5	RVP 5	50	3114.67	0.02 (per tank)
TNK7-TNK12	383,250 (per tank)	22.81	Crude Oil RVP 5	RVP 5	50	2015.14	1.09 (per tank)

FUGITIVES [EMISSIONS CALCULATED USING EMISSION FACTORS FROM EPA DOCUMENT 4531, R-95-017, Table 2-4]

	Valves	Flanges	Connectors	Open Ended lines	Pressure Relief Valves	Other	VOC content of stream (weight %)	Total Annual Emissions (tpy)
Gas	71	76	186	2	3	3	43.2% VOC 2.2% H2S	3.35 tpy VOC 0.11 tpy H2S
Light Oil	36	68	58		1	1	99.6% VOC 0.5% H2S	
Water/Oil	22	44	37					

If VOC content of gas stream <100%, was inlet or other laboratory gas analysis included?		**Date of Sample:**		**VOC content from lab analysis (wt %):**		**H_2S content from lab analysis (wt %):**	

TRUCK LOADING [EMISSIONS CALCULATED USING L_L=(12.46)(S)(P)(M)/(T) EQUATION FROM AP-42, SECTION 5.2-4]

What is being loaded (crude oil, condensate, or water): Produced Water/Oil

S	P (psia)	M (lb/lb-mole)	T (°R)	L_L (lb VOC/1000 gallons loaded)	Hourly Loading Rate (gallons/hour)	Annual Loading Rate (gallons/year)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)

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0.60	8.51	50	579.73	5.50	8000	5368000	0.44	0.08
0.60	6.71	50	567.22	4.43	8000	2304000	35.60	3.02
Are there any controls (explain) : Routed to flare for 98% destruction								

COMMUNICATION LOG

Date	Time	Name/Company	Subject of Communication
12/6/2016	1:24pm	Mr. Justin Wheeler/Hunt Oil	Phone: Reviewer contacted and left a voicemail message for Mr. Wheeler regarding the use of out of county SO2 monitors for background concentration and requesting the call out pages.
12/6/2016	1:54pm	Ms. Elena Nirlo/Zephyr	Phone: Voicemail
12/7/2016	1:05pm	Ms. Elena Nirlo/Zephyr	Phone: Reviewer contacted Ms. Nirlo. The company did not use any other modeling program. They used the EPA's site to get concentrations for Ellis County which is more conservative.
12/8/2016	10:43am	Ms. Elena Nirlo/Zephyr	Email: Ms. Nirlo responded to reviewer. Dear Ms. Hayes, As discussed over the phone yesterday, please find attached an Impacts Analysis Package for the Davis Central Facility (Permit No. 143023) that you can send directly to the Modeling Group. For context, I have also attached a complete electronic copy of the application submitted, where impacts are discussed on pages 26-29 and 66-78 of the pdf. Please let me know if you have any additional questions.
12/16/2016: Reviewer spoke with Team Leader and Modeling Team who approved the company's use of out of county SO2 monitors.			
12/19/2016	1:40pm	Ms. Elena Nirlo/Zephyr	Phone: Reviewer contacted Ms. Nirlo regarding the tanks being routed to the flare. The annual emissions match but the hourly emissions do not. It appears as if only one produced water and one oil tank's emissions are being shown in the flare calculations hourly. Ms. Nirlo indicated that only one tank is filled at a time.
12/21/2016	10:00am	Ms. Elena Nirlo/Zephyr	Phone: Reviewer contacted Ms. Nirlo and left a voicemail message asking for H2S emissions to be added to EPNs HT1, HT2, and HT3.
12/22/2016	4:34pm	Ms. Elena Nirlo/Zephyr Cc: Mr. Justin Wheeler/Hunt Mr. Tomas Sullivan/Zephyr	Email: Ms. Nirlo responded to reviewer. Dear Ms. Hayes, I received your voicemail yesterday about adding trace H2S emissions at the heater treaters. Please find attached replacement pages for the NRSP submittal, where we have added calculations for H2S emissions based on the fuel gas H2S content, and 98% destruction efficiency at the heater treater. Updated sections are highlighted in a light pink color for your convenience. Please let me know if you have any additional questions.

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ESTIMATED EMISSIONS																					
EPN	FIN	Emission Source Name	VOC[2]		NOx		CO		PM_{10}		$PM_{2.5}$		SO_2		Benzene		H_2S		Formaldehyde		Total HAPs[2]	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
FUG-1	FUG-1	Fugitive Emissions	0.77	3.35	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	0.02	0.11	--	--	0.02	0.08
HT-1	HT-1	Heater Treater 1 [3]	<0.01	0.01	0.05	0.21	0.04	0.18	<0.01	0.02	<0.01	0.02	0.70	3.08	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
HT-2	HT-2	Heater Treater 2 [3]	<0.01	0.01	0.05	0.21	0.04	0.18	<0.01	0.02	<0.01	0.02	0.70	3.08	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
HT-3	HT-3	Heater Treater 3 [3]	<0.01	0.01	0.05	0.21	0.04	0.18	<0.01	0.02	<0.01	0.02	0.70	3.08	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
LOAD	LOAD	Truck Loading	10.71	0.92	--	--	--	--	--	--	--	--	--	--	0.02	<0.01	0.11	0.02	--	--	0.32	0.03
FL-1	FL-1	Flare Pilot	0.03	0.14	0.01	0.06	0.03	0.13	--	--	--	--	0.22	0.98	<0.01	<0.01	<0.01	0.01	--	--	<0.01	<0.01
		Combustion Products from Controlled Tanks	--	--	0.04	0.05	0.07	0.09	--	--	--	--	0.76	1.45	--	--	--	--	--	--	--	--
		Combustion Products from Truck Loading	--	--	0.18	0.01	0.33	0.03	--	--	--	--	0.59	0.07	--	--	--	--	--	--	--	--
		Combustion Products from Heater Treater Gas	--	--	0.60	2.62	1.19	5.22	--	--	--	--	9.35	40.95	--	--	--	--	--	--	--	--
		Combustion Products from VRT Gas	--	--	0.02	0.05	0.05	0.10	--	--	--	--	0.24	0.53	--	--	--	--	--	--	--	--
	TNK-1, TNK-2, TNK-3, TNK-7, TNK-8, TNK-9, TNK-10, TNK-11, TNK-12	Controlled Tanks	0.11	0.15	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	0.02	--	--	<0.01	<0.01
	LOAD	Truck Loading	0.50	0.04	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	<0.01	--	--	0.01	<0.01
	HT-GAS	Heater Treater Gas	1.37	5.98	--	--	--	--	--	--	--	--	--	--	<0.01	0.02	0.10	0.44	--	--	0.04	0.19
	VRT-GAS	Vapor Recovery Tower Gas	0.09	0.20	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	<0.01	--	--	<0.01	<0.01
MSS-HTRCLN	MSS-HTRCLN	Vacuum Trucks (Heater Treater Cleanout)	2.25	<0.01	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	0.01	<0.01	--	--	0.07	<0.01
MSS-PIG	MSS-PIG	Pig Launcher Degassing	0.01	<0.01	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	<0.01	--	--	<0.01	<0.01
MSS-TNKCLN	MSS-TNKCLN	Vacuum Trucks (Oil/Condensate Tank Cleanout)	4.87	<0.01	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	0.02	<0.01	--	--	0.14	<0.01
MSS-TNKCLN	MSS-TNKCLN	Vacuum Trucks (Produced Water Cleanout)	0.06	<0.01	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	<0.01	--	--	<0.01	<0.01
MSS-PIPE	MSS-PIPE	Pipeline Degassing	0.01	<0.01	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	<0.01	--	--	<0.01	<0.01
MSS-FS	MSS-FS	Filters/Strainers	0.68	<0.01	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	0.04	<0.01	--	--	0.02	<0.01
MSS-MISC	MSS-MISC	Miscellaneous MSS	0.96	0.25	--	--	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	0.01	--	--	<0.01	<0.01
Estimated Emissions		**Total Emissions**	**21.52**	**11.69**	**0.93**	**3.44**	**1.75**	**6.12**	**<0.01**	**0.05**	**<0.01**	**0.05**	**12.48**	**53.21**	**0.05**	**0.03**	**0.35**	**0.71**	**<0.01**	**<0.01**	**0.63**	**0.33**

*Note: Heater Treaters- the H2S content of fuel gas is limited to 10,970 ppmv. A maximum of two heaters can be fired simultaneously.

	TECHNICAL REVIEWER	PEER REVIEWER	FINAL REVIEWER
SIGNATURE:			
PRINTED NAME:	Ms. Lillian Hayes	Mr. Mark McDonald, Work Leader	Mr. Samuel Short, Manager
DATE:	January 2, 2017	January 3, 2017	January 4, 2017